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GRC Environmental Programs Manual—Chapter 24

Storm Water Pollution Prevention

Approved by: Energy and Environmental Management Office Chief

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NASA - Glenn Research Center
Cleveland, OH 44135

Change Record

Revision	Effective Date	Expiration Date	C-25, Change Request #	Description
A	4/2015	4/2020		Changed approval office name. Chapter updated to reflect new Ohio Construction General Permit and Small MS4 permit regulations. Organizational information was also updated to more accurately reflect Code FE structure. Updated all hyperlinks. Updated form names and relink to new form website.

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Chapter 24.—Storm Water Management Program

NOTE: *This chapter is maintained and approved by the Energy and Environmental Management Office (EEMO). The last revision date of this chapter was March 2015. The current version is maintained on the Glenn Research Center internet at http://www.grc.nasa.gov/WWW/FTD/EEMO/index.html. Approved by: Chief of Environmental Management Office.*

1.0 PURPOSE

This chapter establishes the policies and procedures and assigns responsibilities for all NASA Glenn Research Center (GRC) personnel in the protection of waters of the state by means of pollution prevention measures implemented for storm water runoff and point-source discharges. For Lewis Field, this chapter coincides with and summarizes the requirements of the Ohio Environmental Protection Agency (EPA)-issued National Pollution Discharge Elimination System (NPDES), Phase II Municipal Separate Storm Sewer System (MS4) permit number OHQ000003.

2.0 APPLICABILITY

This chapter is applicable to all personnel whose activities, projects, and/or actions have the potential of adding pollutants into storm water, including but not limited to sediments, oils, fertilizers, herbicides and wash waters that may enter into storm water runoff and waters of the state. Per the Clean Water Act (CWA) of 1972, storm water shall consist entirely of rainwater or snow melt only.

3.0 BACKGROUND

Polluted storm water runoff is a leading cause of impairment to nearly 40 percent of surveyed U.S. water bodies that do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged directly into local water bodies. When left uncontrolled, this water pollution can result in the destruction of fish, wildlife, and aquatic life habitats, a loss in aesthetic value, and threats to public health due to contaminated drinking water supplies and recreational waterways. A 1987 amendment to the CWA of 1972 initiated the NPDES permit process for managing non-point source pollution from medium and large municipalities- Phase I- effective as of 1990. In 2003, the U.S. EPA took the NPDES permitting process a step further to Phase II to address smaller communities also found to be having a detrimental effect on local waterways.

Lewis Field has been designated by the Ohio EPA as a Small, Nontraditional MS4. This permit requires GRC to submit a Storm Water Management Plan (SWMP) demonstrating how the Center intends to implement the required six minimum control measures to meet the compliance requirements under the NPDES Phase II general permit over the 5-year permit term. The six minimum control measures include (1) Public Education and Outreach, (2) Public Participation and Involvement, (3) Illicit Discharge Detection and Elimination, (4) Construction Site Runoff Control, (5) Post-construction Runoff Control, and (6) Pollution Prevention and Good Housekeeping. GRC is required to submit an annual report to the Ohio EPA summarizing the progress of the best management practices (BMPs) and measurable goals for each minimum control measure stated in the SWMP.

Though Plum Brook Station is exempt from implementing the MS4 permit required of Lewis Field, Plum Brook Station is required to follow all requirements of the Ohio Construction General Permit for applicable construction and demolition projects and has voluntarily developed a Storm Water Pollution Prevention Plan (SWP3).

4.0 POLICY

It is GRC policy to follow the requirements and recommendations of all relevant Federal, state, and local regulations applicable to storm water pollution prevention. The complete regulatory texts should be consulted for further details. The following are the authorities that presently regulate storm water at GRC and are incorporated here by reference.

4.1 Clean Water Act of 1972–1977 (Originated as the Federal Water Pollution Control Act of 1948)

The CWA is the cornerstone of surface water quality protection in the United States. (The act does not deal directly with ground water or with water quantity issues.) The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal waste water treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and

maintaining the chemical, physical, and biological integrity of the Nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

4.2 Energy Independence and Security Act (EISA) of 2007 (42 United States Code (U.S.C.) 17094), Title IV, Subtitle C, Section 438: Storm Water Runoff Requirements for Federal Development Projects

The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5000 ft^2 (0.115 acres) shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow (storm water runoff).

4.3 National Pollutant Discharge Elimination System (NPDES)/Storm Water Permit Regulations 40 Code of Federal Regulations (CFR) 122

Authorized by the CWA, initially it was strictly a permit program to control water pollution by regulating point sources that discharge pollutants into waters of the United States. Nonpoint discharges became further regulated in the 1990s in Phase I (communities of 10,000 or more) of the permitting program, and in 2003, Phase II for smaller communities (10,000 or less) was enacted.

4.4 Northeast Ohio Regional Sewer District Code of Regulations (NEORSD), Title II Pretreatment Regulations

The NEORSD Code of Regulations is applicable to any nondomestic user of the public sewer system that discharges substances that may pass through the system or interfere with the operation or performance of the system or may violate any provision of Sections 405 and 406 of the Water Quality Act of 1987 or is engaged in any of the following industrial processes or other processes that may subsequently be added or is otherwise designated by the district.

4.5 Oil Pollution Prevention, 40 CFR 112

This rule provides the policies and procedures to prevent, control, and administer countermeasures to oil spills. It is only applicable to facilities with over 1320 gal of aboveground oil storage capacity and determined by counting only containers of oil with capacities of 55 gal or greater. Facilities subject to this rule must prepare and implement a plan to prevent any discharge of oil into or upon navigable waters of the United States or adjoining shorelines.

5.0 RESPONSIBILITIES

5.1 All GRC Personnel

Any person who discovers a spill or illegal dumping at GRC shall immediately notify Emergency Dispatch on a GRC in-house line (911). If using a cellular phone, dial 216–433–8888 and not 911 when at Lewis Field and 419–621–3222 when at Plum Brook Station. Employees are required to handle, maintain, and store products and equipment in a manner that reduces their potential to the MEP of releasing anything beyond storm water or snow melt into floor drains, storm drains, and/or the environment.

5.2 Human Capital Development Division Chief

The Division Chief is responsible for the maintenance of training records of GRC personnel for SATERN-based training sessions.

5.3 GRC Center Director

The Center Director reviews and signs the Ohio EPA Notice of Intent (NOI) applications, Notice of Termination (NOT), applications and all environmental permit renewals and applications for both Lewis Field and Plum Brook Station. Additionally, the Center Director approves and signs the Storm Water Management Plan and Facility SWP3 for Lewis Field.

5.4 Facilities Division (FD)

5.4.1 NASA Building and Facility Managers

Personnel are required to assess their buildings and facilities for potential sources of pollution and ensure personnel in those facilities are conducting business in a manner that prevents storm water pollution. The NASA Building and

Facility Managers shall assist the illicit discharge detection and elimination (IDDE) team in tracking sources of pollution originating from the buildings they manage.

5.4.2 NASA Civil Systems Manager

The Civil Systems Manager assists in verifying the design aspects related to the modification, replacement, and/or repair of existing or new storm water drainage systems at Lewis Field and Plum Brook Station and assists the IDDE team in tracking and eliminating sources of pollution and cross connections detected in the storm sewer system.

The Civil Systems Manager also verifies design aspects related to submitted SWP3s for projects of 1 acre or larger with emphasis on the inclusion of adequate sediment controls, post-construction BMPs, flooding controls, and general viability of the plan.

5.4.3 NASA Project Manager

The PM ensures the overall management and the quality of the project activities. This individual shall ensure all project goals and objectives are met in a high-quality and timely manner. The PM has stop work authority and is the Energy & Environmental Management Office's (EEMO) point of contact for addressing observed storm water non-compliances.

5.4.4 Construction Support Specialist (CSS)

The CSS is responsible for project control and implementation of project activities in accordance with the design package. They are also responsible for contractor oversight, adherence to quality assurance, quality control field procedures, the project's Health and Safety Plan (HASP), coordination with the NASA PM, field documentation, and the preparation of field change orders, if required. They ensure the contractors and subcontractors on a project are aware and understand the storm water pollution prevention policies of this chapter and/or where required, the SWP3 for the specific project.

5.5 Energy and Environmental Management Office

5.5.1 Chief

The EEMO Chief reviews and signs the MS4 Annual Report for Lewis Field and ensures that storm water personnel in the Division are adequately addressing all of the minimum control measures required by the MS4 permit. The EEMO Chief reviews all plan and document revisions related to storm water as well as training modules for SATERN.

5.5.2 Storm Water Program Lead

The Storm Water Program Lead is responsible for ensuring that all aspects of the Center's Storm Water Management Plan (SWMP) and Facility SWP3 are implemented and tracked. The Storm Water Program Lead also prepares NOI, NOT, and annual report documents for signature by the Center Director. In addition, the Program Lead performs annual reviews and revisions on the SWMP and SWP3 and leads both the IDDE and Storm Water Pollution Prevention Teams.

5.5.3 Storm Water Coordinator

The Storm Water Coordinator conducts public education & participation activities, construction site inspections for compliance with the Ohio Construction General Permit, dry weather outfall screening, quarterly storm water pollution prevention inspections, and provides storm water-related training. The Storm Water Coordinator implements and tracks BMPs as outlined in the Center's SWMP and SWP3. The Storm Water Coordinator also serves as a member of the IDDE and Storm Water Pollution Prevention Teams at Lewis Field.

5.5.4 Illicit Discharge Detection and Elimination Team

The IDDE team includes members of the Facilities Division, EEMO, the respective building managers, and support service contractors to track permit exceedances as well as oils and other non-storm-water contaminants detected in the discharges originating from facilities and operations of GRC.

5.5.5 Storm Water Pollution Prevention Team

The Storm Water Pollution Prevention Team consists of members from both EEMO and the FD. The team is responsible for assisting the Storm Water Program Lead in revising the Facility SWP3, implementing and maintaining BMPs, and taking corrective actions where required.

5.6 Support Service Contractors

Since more than half of the workforce at GRC are support service contractors (SSCs), these personnel have an important role in the success of the Center to achieve compliance to this chapter. The NASA organizations and SSC supervisors managing the SSC contracts are required to ensure their personnel are aware, understand, and abide to the policies of this chapter.

Note: For Lewis Field, many of the individually listed responsibilities are required per Center policies and originate from the Lewis Field Storm Water Management Plan, which has established many of these responsibilities as acceptable best management practices. Therefore, specific regulatory references are not provided, though they all stem from the requirements to be established to a specific site per 40 CFR 122. In addition, though Plum Brook Station is not required to establish a SWMP, the following responsibilities are practices all shall consider following.

5.6.1 Facilities Maintenance Personnel

- Personnel shall, to the MEP, capture and properly dispose of the byproducts and residual wastes created by their tasks to maintain, upgrade, clean, and/or repair facility infrastructure. Such activities include, but are not limited to the following: building facade power washing and cleaning, grout removal, painting, sand blasting, concrete repairs and replacement, underground utility repairs and replacement, and aboveground utility repairs and replacements.
- Disturbed soils shall be seeded and/or mulched if to remain dormant yet disturbed for longer than 14 days. An adequate watering plan is essential for successful seed germination and permanent soil stabilization.
- Stockpiles of soils shall be covered with tarps and/or plastic on the day the soil piles are created to prevent migration of sediments to storm drain.
- Bulk storage of chemicals, fuels, and stockpiles of gravel, mulch, and soil shall be stored at least 10 ft. from storm inlets with appropriate spill kits onsite.
- Personnel shall inspect maintenance vehicles and equipment on a routine basis for leaks and deterioration of hoses and seals. EEMO highly recommends fuel delivery vehicles have their own spill kits.

5.6.2 Fuel Management and Delivery Personnel

- Personnel shall utilize spill kits and storm drain protection equipment at all times at locations where there is the potential of a fuel or oil spill or leak to enter a storm drain during fuel delivery operations.
- Personnel shall inspect fuel delivery vehicles and associated hoses, nozzles, pumps, and gears prior to each delivery for leaks and/or deterioration and repair promptly.
- EEMO highly recommends fuel delivery vehicles have their own spill kits.

5.6.3 Fleet Vehicle Maintenance and Operations Personnel

- Personnel shall ensure that vehicle maintenance is up to date and that vehicle leaks of coolants, fuels, and oils are promptly corrected and prevented from entering storm drains. These facilities shall have designated personnel who visually inspect the site on a monthly basis per the site specific inspection form, well stocked spill kits visibly available onsite, and signs posted detailing emergency fire and spill contact information.

5.6.4 Grounds Personnel

- Personnel who complete landscaping tasks such as grass cutting, leaf pickup, tree pruning and planting, and other facility aesthetic maintenance shall prevent sediments and debris resulting from these activities from entering storm drains, drainage swales, and/or biogardens.

- Disturbed soils shall be seeded, and/or mulched if to remain dormant yet disturbed for longer than 14 days. An adequate watering plan is essential for successful seed germination and permanent soil stabilization.
- Stockpiles of soils shall be covered with tarps or plastic on the day the soil piles were created to prevent migration of sediments to storm drain.
- Bulk storage of chemicals, fuels, and stockpiles of gravel, mulch, and soil shall be stored at least 10 ft. from storm inlets with appropriate spill kits onsite.
- Those personnel who apply herbicides, pesticides, and/or fertilizers shall be certified to do so and maintain documentation of the locations and quantities of the products being applied.
  - See Herbicides, Pesticides, and Fertilizer Applications in the Environmental Programs Manual, Chapter **21**, Pest Control, for further guidance.
- Gas, oil, and hydraulic equipment such as lawnmowers, chain saws, weed trimmers, and backhoes shall be inspected on a routine basis for leaks and hose deterioration. Any damages shall be repaired promptly.
- EEMO highly recommends that spill kits be available on the vehicle and/or equipment at all times.

5.6.5 High and Low Voltage Personnel

High-voltage and low-voltage personnel shall contact the EEMO Storm Water Program Lead or Storm Water Coordinator prior to discharging water from high-voltage tunnels, man-ways, and communication and power manholes. When feasible, contact EEMO 2 days prior to work in the event the water needs to be containerized and sampled for any of the two reasons:

- Presence of a sheen, pungent odors, and/or noticeable discoloration or suspended solids
- Previous water sampling has indicated the presence of contaminants at levels at or above NEORSD pretreatment limits as stated in Chapter **3** of the NEORSD Title II Pretreatment Regulations

See Section **6.6** of this chapter for detailed requirements.

5.6.6 Janitorial Personnel

- Carpet and floor wash water shall be disposed in building slop sinks and/or to sanitary floor drains only.
- Trash and spent cleaning supplies shall be disposed in their allocated locations and dumpsters.

5.6.7 Tank Site Managers

- Tank Site Manager (TSM) personnel include those designated by EEMO or their organizations as providing oversight and monthly inspections of aboveground storage tanks (ASTs), oil-filled operating equipment, 55-gal drums, or underground storage tanks (USTs).
- TSMs are required to maintain spill kits and secondary containments where applicable, to ensure associated personnel are trained and monthly inspections are completed, and to ensure spills or leaks into floor drains or storm inlets are reported immediately to Emergency Dispatch on a GRC in-house line (911). If using a cellular phone, dial 216–433–8888 and not 911 when at Lewis Field and 419– 621–3222 when at Plum Brook Station Dispatch at Lewis Field and the Comm Center at Plum Brook Station.

5.6.8 Road, Walkway, and Parking Lot Deicing Personnel

- Personnel who perform deicing and snow removal activities at GRC shall operate and maintain equipment to prevent disturbance of soils and ensure proper application of deicing materials. These personnel shall inspect equipment for fuel, oil, and other vehicle liquid leaks prior and after use.
- Documentation of the following is required:
  - How and when deicing equipment is recalibrated
  - Amounts of salt applied each season
- The salt dome area shall be kept clean of excess salt originating from deliveries and truck loading.

- Areas of over-application shall be spread out or collected for use elsewhere at GRC.
- At end of deicing season, leftover salt shall be swept from roads, walkways, and parking lots to the MEP.

5.7 Outside Contractors and/or Subcontractors

Normally utilized for specific short-term tasks at either Lewis Field or Plum Brook Station, these personnel change frequently and their onsite durations range from a few hours to over several months. The organizations and SSCs who procure and provide these subcontractors access to GRC are responsible for ensuring that these personnel are aware, understand, and abide by the policies of this chapter.

6.0 REQUIREMENTS

6.1 Training

Completion of the storm water training module in SATERN (or via an in-person session) is required for groups of employees whose tasks may have a direct impact on storm water quality at the Center, such as janitorial and grounds personnel, construction inspectors & managers, and garage employees. Although the training is not a requirement for all employees at GRC, it is available to all. This training is a recommended supplement for personnel to obtain an understanding of their responsibilities under the policies of this chapter.

6.2 Storm Water Runoff Requirements for Federal Development Projects Exceeding 5000 ft^2

- Ohio EPA Guidance Document
  - **Option 1: Control of the 95th Percentile Rainfall Event**.—Design, construct, and maintain storm water management practices that manage rainfall onsite and prevent the offsite discharge of the precipitation from the 95th percentile rainfall event. This shall be accomplished by the natural hydrologic processes of infiltration, evapotranspiration, and/or the mechanical process of rainwater harvesting and reuse.
  - **Option 2: Hydrologic Analysis**.—Design, construct/implement, and maintain storm water management practices that preserve the predevelopment runoff conditions following construction. The post-construction rate, volume, duration and temperature of runoff shall not exceed the predevelopment rates. This shall be accomplished by the natural hydrologic processes of infiltration, evapotranspiration, and/or the mechanical process of rainwater harvesting and reuse. Satisfaction of this requirement must be demonstrated through the use of approved hydrology assessment and modeling methods.

6.3 Storm Water Pollution Prevention Plans (SWP3)

6.3.1 Lewis Field Facility SWP3

This plan, as required per the NPDES Permit OHC000003, provides a description of best management practices that are utilized at Lewis Field to minimize storm water pollution from its industrial-type facilities and municipal-type operations. Examples of the industrial-type facilities at Lewis Field include the maintenance garage, salt dome, and gated storage yard. Municipal-type activities include street sweeping, deicing, and catch basin cleaning as a few examples. This plan was developed in accordance with the SWP3 requirements of Ohio EPA's Industrial Storm Water General Permit (OHR000005).

6.3.2 SWP3 for Projects with Soil Disturbance of 1 Acre and Larger

All construction, demolition, and associated staging areas that disturb 1 acre or greater are required to have a SWP3 onsite addressing all of the requirements of the Ohio EPA Construction General Permit (CGP) OHC00004.

Ohio EPA's SWP3 Checklist

- Approval by EEMO and complete signoff by all required parties on the NASA Construction SWP3 Concurrence Form (See Appendix **B**) is required prior to EEMO submitting the NOI application to the Ohio EPA.

This type of SWP3 is developed and supplied by the contractor and/or designer of the project. It shall also include two parts:

- BMP Site Map.—Includes a detailed site map showing the boundaries and staging areas of the work project along with all of the BMPs to be utilized to prevent erosion of soils from occurring and sediments from migrating offsite and into waters of the state.
- SWP3 Binder.—This binder shall contain all of the items as listed on the Ohio EPA SWP3 Checklist. This binder shall contain a copy of the Ohio EPA Notice to Proceed letter; NASA's Duty to Inform Form (see Appendix **C**), completed contractor weekly and storm event site inspections (see Appendix **D** for example checklist), and any amendments to the plan documenting changes in BMPs utilized or utilization of the plan itself.

6.4 Permits

6.4.1 Ohio EPA Facility Permit Number 3GQ00067*BG

In compliance with the provisions of the Federal Clean Water Act and the Ohio Water Pollution Control Act (Ohio Revised Code Chapter 6111), discharges of storm water from Lewis Field, as defined in Part 7 of the NPDES Permit number OHQ000003, is authorized by the EPA to discharge from outfalls and to the receiving waters of the state in accordance with the conditions specified in this permit.

6.4.2 Lewis Field NPDES Waste Water Discharge Permit Number 3IO00001*ID

This permit authorizes Lewis Field to discharge in accordance with the limitations and monitoring requirements stated in the permit for Outfalls 001, 003, 004, 006, 007, and 008. Parameters include mercury, pH, chlorine, conductivity, total dissolved solids, temperature, and flow.

6.4.3 NPDES Waste Water Discharge Permit Number 2IO00002*KD

This permit authorizes Plum Brook Station to discharge in accordance with the limitations and monitoring requirements stated in the permit for Outfalls 001 and 003. Parameters include metals, oil and grease, pH, chlorine, chemical oxygen demand, hardness, total suspended solids, temperature, and flow. Contact the PBS Environmental Programs Manager for a copy of this permit.

6.4.4 Ohio EPA Construction General Permit (CGP) Number OHC000004

For projects disturbing soils of 1 acre or larger, a SWP3 shall be developed prior to submitting the NOI application to the Ohio EPA. This permit states all of the requirements to be included in the SWP3 as well as the responsibilities of the permittee (NASA).

6.4.4.1 Ohio EPA CGP Notice of Intent (NOI) and Notice of Termination (NOT) Application

- NOI Application Form
- The NOI package to be sent to the Ohio EPA shall include a site map, the completed NOI application form, and a check for the appropriate amount per acreage of disturbance. Contractors and subcontractors impacted by the requirements of a project's SWP3 shall submit an Ohio EPA Co-Permittee NOI application form for their activities to be covered under the CGP granted to the project. No fee is required with this permit.
- The project's SWP3 does not need to be submitted to the Ohio EPA unless otherwise requested.
- Once the SWP3 is approved, the Center Director signs the NOI application form and submits the entire NOI package to the Ohio EPA to request coverage under the Construction General Permit (CGP). At Plum Brook Station, the NOI application package is signed and forwarded by the Plum Brook Environmental Manager.
- The Ohio EPA requires a minimum of 21 days to review the NOI and grant permission to NASA.
- The original Ohio EPA NOI permission letter will be maintained by EEMO**.**
- Upon completion of the project the Notice of Termination (NOT) Signoff Form (see Appendix **E**) shall be signed by all required parties once the site has reached 70 percent of full soil stabilization and all soil-disturbing activities are completed. At Lewis Field and Plum Brook Station, the Ohio EPA NOT application is verified, completed, and signed by the Center Director and then submitted to the Ohio EPA to

request the cease of coverage under the CGP. The original Ohio EPA NOT concurrence letter will be maintained by EEMO

6.4.5 Individual Permits

Discharges required but not covered by any of the above referenced permits may require an individual permit to obtain authorization to discharge or continue operations. Such permits may include a Permit to Install, Industrial Storm Water, Small Sanitary Discharge, Non-Contact Cooling Water, and Temporary Discharges.

6.5 Storm Water Management Program (Lewis Field Only)

6.5.1 Ohio EPA Small, Nontraditional MS4 Permit Requirements

Per this permit, Lewis Field shall develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the Center to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of Ohio Revised Code (ORC) 6111 and the CWA. The SWMP shall include management practices, control techniques, and system, design, and engineering methods and shall be modified to include provisions as Ohio EPA determines appropriate after its review of the program for the control of such pollutants. The SWMP shall include the following information for each of the six minimum control measures described in Part III.B of the MS4 permit.

6.5.1.1 Six Minimum Control Measures

The six minimum control measures include (1) Public Education and Outreach, (2) Public Involvement and Participation, (3) Illicit Discharge Detection and Elimination, (4) Construction Site Runoff Controls, (5) Post-construction Best Management Practices, and (6) Good Housekeeping and Pollution Prevention. Each minimum control measure requires an assortment of BMPs and measureable goals to gauge their effectiveness in preventing storm water pollution and shall be documented over each 5-year permit term, with summary annual reports submitted to the Ohio EPA ending each year (submitted to the Ohio EPA by April 1 each year).

The following are brief summaries of what each minimum control measure requires and examples of what has been implemented at Lewis Field.

6.5.1.1.1 Public Education and Outreach

Ohio EPA has designated Lewis Field as a nontraditional MS4; therefore Lewis Field is required only to provide educational material, and outreach to employees, onsite contractors, and individuals using the facilities. Posters, Today@Glenn postings, Aerospace Frontier postings, and sustainability events have been and will continue to be utilized.

6.5.1.1.2 Public Involvement and Participation

Ohio EPA has designated Lewis Field as a nontraditional MS4; therefore Lewis Field is required only to involve employees, onsite contractors, and individuals using the facilities. Events such as stream cleaning, rain barrel workshops, storm drain stenciling, and biogarden maintenance are activities that have taken place at Lewis Field to fulfill the public involvement/participation metrics.

6.5.1.1.3 Illicit Discharge Detection and Elimination

Lewis Field is required to develop, implement, and enforce a program to detect and eliminate illicit discharges, as defined in Part VI of the permit. This includes having a comprehensive storm sewer map, showing the location of all outfalls and the names of all surface waters of the state that receive discharges from those outfalls. Additionally, the map details the locations of all catch basins, pipes, ditches and post-construction water quality devices that have been installed to meet Ohio EPA's NPDES construction general permit requirements.

The Center's SWMP shall enforce policies to prohibit illicit discharges such as illegal dumping, cross connections, and other non-storm-water discharges. Facility personnel shall be informed of the hazards associated with illegal discharges and improper disposal of wastes.

Lewis Field is also required to develop an IDDE program to actively investigate the source(s) of contamination identified during a dry weather screening process. If determined that an illicit discharge has occurred or is occurring,

the Lewis Field IDDE team further tracks the source of the contamination through the use of underground record drawings of the sewer systems, in-field sewer investigations, dye testing, or third-party camera inspections.

Upon the IDDE team locating the source, the tasks required to eliminate the source are initiated with GRC tracking system, such as MAXIMO, SHEtrack and CPARs, which issued to the responsible organization(s) in order to track the progress of eliminating the source and prevention measures to be put in place. EEMO maintains the records of illicit discharges detected and eliminated through these systems.

6.5.1.1.4 Construction Site Runoff Controls

- Requires Lewis Field to minimize pollutants from construction activities that result in a land disturbance of greater than or equal to 1 acre.
- Reduction of pollutants in storm water discharges from construction activity disturbing less than 1 acre shall be included in this program if that construction activity is part of a larger common plan of development that would disturb 1 acre or more.
- Policies shall be equivalent with the technical requirements set forth in the Ohio EPA NPDES Construction General Permit number OHC000004.
- For Lewis Field, storm water construction specifications have been written and are included in all construction bid packages to contractors detailing the requirements and procedures stated in the Ohio EPA Construction General Permit and the Ohio Department of Natural Resources (ODNR) 2006 Rainwater and Land Development Manual.
- All projects of 1 acre or larger have SWP3s developed and are approved by the FD Civil Systems Manager and EEMO's Storm Water Program Lead prior to the Ohio EPA NOI being submitted for coverage under the Ohio EPA CGP.
- Oversight of the implementation and maintenance of construction site runoff controls are required by all of the following: contractors per the policies of this chapter, the SWP3 where applicable, Facilities Division CSSs; and the EEMO Storm Water Program Lead.

6.5.1.1.5 Post-Construction Best Management Practices

- Requires Lewis Field to set policies and requirements to address storm water runoff from new development and redevelopment projects with the goal of returning to predevelopment runoff conditions.
- Policies shall be equivalent with the technical requirements set forth in the Ohio EPA NPDES Construction General Permit number OHC000004.
- Requires policies to ensure adequate long-term operation and maintenance of the BMPs implemented.
- Structural practices include swales, bioretention gardens, permeable paver parking lots, vegetated roofs, oil and water separators, and other manmade systems to capture storm water pollutants before they can migrate directly to Abram Creek and Rocky River.
- Nonstructural practices include the policies themselves, which may include protecting wetlands and riparian setbacks, maintaining and/or increasing open space, establishing no-mow zones, and other means of low-impact development to minimize soil disturbances and the increase of impervious areas such as asphalt and concrete parking lots.
- See ODNR 2006 Rainwater and Land Development Manual for further guidance.

6.5.1.1.6 Good Housekeeping and Pollution Prevention

- Requires Lewis Field to develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.
- The training mechanism shall address such activities as fleet and building maintenance, new construction and land disturbances, storm water system maintenance, and grounds maintenance.

- Industrial facilities that conduct activities described in 40 CFR 122.26(b)(14) that are not required to obtain Industrial Storm Water General Permit coverage- including vehicle maintenance facilities, fuel transfer stations, exterior storage lots- shall develop and implement a SWP3 in accordance with the SWP3 requirements of Ohio EPA's Industrial Storm Water General Permit (OHR000005).
- Lewis Field's SPCC plan is one of these BMPs and stems from the amount of oil stored and used at the Center. SPCC annual training is available on SATERN or in-class sessions are available to meet areas of this requirement.
- Street sweeping, sewer cleaning, and oil and water separator inspecting and cleaning are other BMPs the Center implements to meet this minimum control measure.
- All personnel and organizations should assess their task duties and their potential for contributing to storm water pollution. The main organizations and their responsibilities have been the main focus in this chapter, but the policies apply to all personnel at Lewis Field.

6.6 Storm Water Accumulations

At Lewis Field, the contractor shall obtain sampling and analysis as directed by either the Storm Water Program Lead or Waste Water Program Manager prior to discharge to surface water. When possible, the water shall be purged to a grass or gravel area instead of storm sewer inlet.

At Plum Brook Station, the contractor shall obtain sampling and analysis as directed by the Plum Brook environmental staff prior to discharge to surface water.

6.6.1 Water Accumulations in an Excavation

Storm water runoff that enters and accumulates in excavations shall be inspected by respective Center environmental staff prior to purging.

6.6.2 Accumulations in Exterior Aboveground Storage Tank (AST) Secondary Containments

Storm water and snow melt accumulations in secondary containments of exterior ASTs shall be inspected for oil or fuel sheen, odors, and discoloration by the respective Center's environmental staff prior to discharge. Inspections and discharges shall be documented. In instances where sheen is observed, the tank operator shall issue a NASA **GRC260A** to Waste Management to have the contaminated water collected, analyzed, and disposed of properly. Source of the sheen shall be identified and fixed (if feasible) and the containment cleaned of any remaining residual fuels and/or oils prior to additional deliveries to the tank.

6.6.3 High-Voltage and Communication Manholes

Storm water accumulations in high-voltage and communication manholes shall be visually inspected by the respective Center's environmental staff for the presence of fuel or oil sheen, pungent odors, or noticeable discolorations prior to discharge to the storm sewer system.

6.6.4 Building Subbasements and Utility Trenches

Ground water accumulations in building subbasements and utility trenches shall be visually inspected by the respective Center's environmental staff for the presence of fuel or oil sheen, pungent odors, or noticeable discolorations prior to discharge to the storm sewer system.

7.0 RECORDS

- Exterior AST Secondary Discharge Inspections
  - EEMO AST Program Lead for ASTs at Buildings 5, 12, 53, and 64
  - Waste Management Tank Site Manager for ASTs at Building 215
  - Support service contractor at Plum Brook Station
- Inspections, discharge records, and applicable sample analysis for storm water runoff and ground water accumulations from excavations, high-voltage tunnels, communication and power manholes, subbasements, and building utility trenches

  - For Lewis Field, maintained by the EEMO Storm Water Program Lead
  - For Plum Brook Station, maintained by the Environmental Manager
- Ohio EPA NOI, NOT, Co-Permittee acceptance letters
  - For Lewis Field, maintained by the EEMO Storm Water Program Lead
  - For Plum Brook Station, maintained by the Environmental Manager
- Pesticide, herbicide, fertilizer applications, locations, and amounts
  - Maintained by the respective support service contractor at Lewis Field and Plum Brook Station
- EEMO Construction SWP3 Review forms and Sign-Off Form (Appendix **B**)
  - For Lewis Field, maintained by the EEMO Storm Water Program Lead
  - For Plum Brook Station, maintained by the Environmental Manager
- EEMO Duty to Inform Sign-Off Form and NOT Sign-Off Form (Appendix **C** and Appendix **E**)
  - For Lewis Field, maintained by the EEMO Storm Water Program Lead
  - For Plum Brook Station, maintained by the Environmental Manager
- EEMO monthly construction site inspection forms (Appendix **F**)
  - For Lewis Field, maintained by the EEMO Storm Water Program Lead
  - For Plum Brook Station, maintained by the Environmental Manager
- EEMO-submitted annual Lewis Field MS4reports to the Ohio EPA
  - Maintained by the EEMO Storm Water Program Lead
- Salt usage, salt spreader calibration, street sweeping usage, and waste disposal records
  - Maintained by the respective support service contractor at Lewis Field and Plum Brook Station

8.0 REFERENCES

Document number	Document name
2006 Edition	Rainwater and Land Development Manual
40 CFR 112	Oil Pollution Prevention
40 CFR 122	National Pollutant Discharge Elimination System (NPDES)/Storm Water Permit Regulations
42 United States Code (U.S.C.) 17094	Energy Independence and Security Act (EISA) of 2007
Ohio Regional Code 6111	Ohio Water Pollution Control Act
GLM–QS–1800.1-3	Environmental Programs Manual, Chapter **3**, Water Pollution Control
GLM–QS–1800.1-8	Environmental Programs Manual, Chapter **8**, Spill Response and Control
GLM–QS–1800.1-21	Environmental Programs Manual, Chapter **21**, Pest Control
GLM–QS–1800.1-23	Environmental Programs Manual, Chapter **23**, Handling and Disposal of Soil
Title II Pretreatment Regulations	Northeast Ohio Regional Sewer District Code of Regulations

APPENDIX A.—DEFINITIONS AND ACRONYMS

Aboveground storage tank (AST)

Best management practice (BMP).—A schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage and leaks, sludge or waste disposal, or drainage from raw material storage.

Clean Water Act (CWA).—Formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972.

Code of Federal Regulations (CFR)

Construction General Permit (CGP).—State-issued permit for controlling water pollution from construction sites disturbing one acre or larger of land.

Control measure.—Any best management practice or other method used to prevent or reduce the discharge of pollutants to the waters of the state.

Corrective and Preventive Action Report (CPAR)

Duty to Inform.—The permittee (representative that obtains a Construction General Permit from Ohio EPA) shall inform all contractors and subcontractors not otherwise defined as "operators" in Part VII of Ohio EPA's Construction General Permit (OHC000004), who will be involved in the implementation of the Storm Water Pollution Prevention Plan (SWP3), of the terms and conditions of the general construction permit. Furthermore, the permittee shall maintain this document containing the signatures of all contractors and subcontractors involved in the implementation of the SWP3 as proof acknowledging that they reviewed and understand the conditions and responsibilities of the SWP3, including all (i) erosion controls, (ii) sediment controls, (iii) non-sediment pollutant controls, and (iv) post-construction controls (Ohio EPA's Construction General Permit). See Appendix **E**.

Energy Independence and Security Act (EISA)

Environmental Protection Agency (EPA)

Facilities Division (FD)

Glenn Research Center (GRC)

Health and Safety Plan (HASP)

Illicit connection.—Any manmade conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit discharge detection and elimination (IDDE)

Illicit discharge.—As defined in 40 CFR 112.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from firefighting activities.

Impervious area or surface.—Area composed of any material that impedes or prevents natural infiltration of water into the soil.

Integrated Contingency Plan (ICP).—Plan intended to be used by facilities to prepare emergency response plans for responding to releases of oil and non-radiological hazardous substances. The Integrated Contingency Plan creates one functional emergency response plan by consolidating plans necessary to comply with multiple regulations.

Larger common plan.—A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

Leadership in Energy and Environmental Design (LEED).—Developed by the U.S. Green Building Council (USGBC), provides a suite of standards for environmentally sustainable construction which awards points amongst many categories, but most specifically for storm water quantity and quality controls that are implemented in new construction and redevelopment.

Maximum extent practicable (MEP).—The technology-based discharge standard for Municipal Separate Storm Sewer Systems (MS4s) to reduce pollutants in storm water discharges that was established by the Clean Water Act 402(p). A discussion of MEP as it applies to MS4s is found at 40 CFR 122.34.

Municipal Separate Storm Sewer System (MS4).—A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that are (1) Owned or operated by the Federal Government that discharge into surface waters of the state; (2) Designed or used for collecting or conveying solely storm water; (3) Which is not a combined sewer; and (4) Which is not a part of a publicly owned treatment works.

National Pollution Discharge Elimination System (NPDES).—Permit program developed to control water pollution by regulating point and nonpoint sources that discharge pollutants into waters of the United States.

Nontraditional MS4.—System similar to separate storm sewer systems in municipalities, such as systems at military bases, research facilities, and universities.

Northeast Ohio Regional Sewer District (NEORSD)

Notice of Intent (NOI).—The Ohio EPA mechanism used to "register" for coverage under a general permit.

Notice of Termination (NOT).—The Ohio EPA mechanism used to "cease" coverage under the general permit.

Ohio Department of Natural Resources (ODNR)

Ohio Revised Code (ORC)

Oil.—Oil of any kind or in any form, including, but not limited to fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

Outfall from an MS4.—A point where a municipal separate storm sewer discharges to surface waters of the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, or tunnels or other conveyances that connect segments of the same stream or other surface waters of the state and are used to convey waters of the state.

Project Manager (PM)

Safety and Health Division (SHeD)

Small MS4.—All municipal separate storm sewer systems that are located in an incorporated place with a population less than 100,000 as determined by the 1990 census by the United States Bureau of Census.

Spill prevention, control, and countermeasure (SPCC) plan.—Facilities subject to 40 CFR 112 must prepare and implement a plan to prevent any discharge of oil into or upon navigable waters of the United States. The SPCC plan is incorporated into the respective ICPs for both Lewis Field and Plum Brook Station.

Storm Water Management Plan (SWMP).—Ohio EPA required plan for MS4 operators comprising six minimum control measures that when administered in concert, are expected to result in reduction of the discharge of pollutants into receiving water bodies.

Storm Water Pollution Prevention Plan (SWP3).—For construction sites, the CGP requires that a SWP3 be developed and must address all minimum components of the CGP and conform to the specifications of the Rainwater and Land Development manual. For Lewis Field only, a SWP3 that follows the guidelines of the Industrial Storm Water is required.

Storm water.—As defined in 40 CFR 122.26(b) (13) and includes storm water runoff, snow melt runoff, and surface runoff and drainage.

Support service contractor (SSC)

Surface waters of the state.—All streams, lakes, reservoirs, ponds, marshes, wetlands, or other waterways, which are situated wholly or partly within the boundaries of the state, except those private waters that do not combine or affect a junction with surface water.

System for Administration, Training, and Educational Resources at NASA (SATERN)

Tank Site Manager (TSM)

U.S. Green Building Council (USGBC)

Underground storage tank (UST)

United States Code (U.S.C.)

APPENDIX B.—NASA CONSTRUCTION SWP3 CONCURRENCE FORM

NASA Glenn Research Center
Storm Water Management Program - Construction
Storm Water Pollution Prevention Plan (SWP3) Concurrence
Ohio EPA General Construction Permit # OHC000004

Location/Facility Name **Date Submitted for Review**

NASA Project Manager Name **Phone #**

Prime Contractor (Responsible for SWP3 Implementation) **Phone #**

EEMO Reviewer Name **Phone #**

I certify under penalty of law that all elements required of the storm water pollution prevention plan have been addressed in this plan per the Ohio EPA SWP3 Checklist. I understand that, by signing this SWP3 Concurrence Form, I am not authorized to disturbed soils of this project until the Ohio EPA has reviewed the Notice of Intent Application and NASA has received the Ohio EPA letter to proceed.

Completion of this form constitutes an understanding that the NASA Facilities Division Project Manager and Prime Contractor hereby assume site responsibilities formally managed by the NASA Facilities Division Civil Systems Manager.

SWP3 Completion Signatures:

Facilities Division Project Manager: Date:

Facilities Division SWP3 Reviewer: Date:

Prime Contractor Representative and Title Date:

Environmental SWP3 Reviewer Date:

Revised 4/17/15

APPENDIX C.—NASA GRC DUTY TO INFORM SIGNOFF FORM

NASA Glenn Research Center

Storm Water Management Program

Duty to Inform

Project Name:

This document, per requirements of the Ohio EPA Construction General Permit: OHC000004, shall be maintained by the permittee (NASA) and contain the signatures of all contractor and subcontractor supervisors involved in the implementation of the Storm Water Pollution Prevention Plan (SWP3) designated for this project.

By signing this "Duty to Inform" document, you are acknowledging that you have reviewed and understand the conditions and responsibilities of the SWP3 for this project.

Printed Name: Signature: Company Name:

Revised 4/17/15

APPENDIX D.—EXAMPLE CONTRACTOR WEEKLY AND STORM EVENT SITE INSPECTION CHECKLIST

PROJECT NAME: PERMIT #:
PRIME CONTRACTOR: APPROVAL DATE:

GRC Construction Storm Water Site Inspection Form

INSPECTIONS SHALL BE CONDUCTED ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF 0.5" OR GREATER OF RAINFALL AND/OR 2" OF SNOW MELT.

INSPECTION DATE: _____ INSPECTOR NAME: _____

INSPECTOR TITLE/QUALIFICATIONS: _____

PROJECT LOCATION (if multiple areas are to be inspected): _____

WEATHER INFORMATION:

- Weather since last inspection: _____
- Estimated last storm event duration (min) and rainfall amount (inches): _____ / _____
- Had any stormwater discharges from the site occurred (yes/no): _____
- If yes, describe discharge and where onsite it was observed: _____

SILT FENCING / DIVERSIONS	YES	NO	N/A
1. Silt fencing is entrenched at least 6" into the ground and backfilled and compacted?			
2. Silt fencing is pulled tight so it will not sag when water accumulates behind it?			
3. Ends of silt fencing are brought up slope from the rest of the silt fencing?			
4. Are all sections of silt fencing free of gaps, tears, and/or damage?			
5. Is the silt fencing able to control the run-off from the drainage area?			
6. Is silt and sediment more than a third of the way up the visible silt fencing height?			
7. Are other diversionary BMPs utilized working properly?			
8. Are other diversionary BMPs needed to keep sediment on site?			

INLET PROTECTION	YES	NO	N/A
1. Are all inlets receiving run-off from the construction site protected?			
2. Are the inlet windows (where applicable) also protected?			
3. Does water pond around the inlet when it rains?			
4. Has accumulated sediment been removed on a frequent basis?			
5. Are high amounts of sediment accumulating at the protected inlet?			
6. Is ponding in the area due to the inlet protection a potential flooding concern?			
7. Is the inlet protection free of holes, tears, and other damage?			

CONSTRUCTION ENTRANCE	YES	NO	N/A
1. Is the construction entrance sized to prevent tracking of sediments off-site?			
2. Is the construction entrance becoming overburdened with sediment?			
3. Is sediment leaving the construction entrance when it rains?			
4. Are any repairs or the addition of more stone needed?			
5. Are the adjacent streets to the construction entrance being kept clean?			

GRC Energy & Environmental Management Office (EEMO)
Form updated: 4/17/15

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PROJECT NAME: PERMIT #:
PRIME CONTRACTOR: APPROVAL DATE:

SEDIMENT TRAPS, PONDS, and BIORETENTION GARDENS	YES	NO	N/A
1. Is concentrated flow of run-off being directed to a sediment trap or pond?			
2. Is the pond or trap able to adequately retain the run-off being directed to it?			
3. For sediment traps, are the stone spill ways holding up and not overburdened?			
4. Is it time to clean-out the sediment pond/trap to restore it to its original capacity?			
5. Has removed sediments been disposed of properly or seeded if kept onsite?			
6. Is the bioretention garden being protected from sediment during installation?			

TEMPORARY STABILIZATION	YES	NO	N/A
1. Are there any areas that are disturbed, but will lie dormant for more than 14 days?			
2. Have all dormant, yet disturbed areas been temporarily stabilized as required?			
3. Are there any soil stockpiles that will lie dormant for more than 14 days?			
4. Have these stockpiles been covered or actions to temporarily stabilize started?			
5. If seeded, has the temporary stabilization been established adequately?			
6. Are there any areas that require re-seeding, re-mulching, or re-tarped?			
7. If out of the growing season, have other stabilization measures been utilized?			
8. Are there any areas of washout that may need additional erosion controls?			

PERMANENT STABILIZATION	YES	NO	N/A
1. Are there any areas at final grade?			
2. Has the soil been properly prepared to accept permanent seeding (per spec)?			
3. Has rainfall or manual watering been adequate to establish grass?			
4. Have slopes been reinforced with adequate erosion controls?			
5. Are there any areas that require repairs and reseeding?			
6. Has the area reached full stabilization (or 70% stabilization)			
7. Are there any areas of washout that may need additional erosion controls?			

NON-SEDIMENT POLLUTION CONTROLS	YES	NO	N/A
1. Is the concrete washout properly retaining the concrete slurry and water?			
2. Does the concrete washout still have adequate capacity?			
3. Is the concrete washout being kept covered to minimize rainwater accumulation?			
4. Are dumpsters being properly utilized for the wastes generated?			
5. Are the dumpsters located in their designated locations?			
6. Are there any leaks of chemicals or other liquids coming from the dumpsters?			
7. Is any of the heavy equipment leaking fluids such as hydraulic oil or fuel?			
8. Are spill kits visible onsite where hydraulic equipment or fuels are used and stored?			
9. Are spill kits adequately stocked?			
10. Are fuels, oils, and chemicals stored at least 9 feet from inlets and ditches?			
11. Is dewatering of water from trenches and excavations necessary?			
12. If yes, has EEMO been contacted to verify where the water may be discharge to?			

NOTES OF REPAIRS AND MAINTENANCE NEEDED: _____

_____

_____

_____

_____

_____

GRC Energy & Environmental Management Office (EEMO)
Form updated 4/17/15

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APPENDIX E.—NASA GRC NOTICE OF TERMINATION CONCURRENCE FORM

NASA Glenn Research Center
Storm Water Management Program
GRC Pre-Notice of Termination (NOT) Sign-Off Form

Location/Facility Name **Ohio EPA Issued Permit #**

NASA Project Manager Name **Phone #**

Prime Contractor Supervisor Name and Company Name **Phone #**

EEMO Inspector Name **Phone #**

I certify under penalty of law that all elements of the storm water pollution prevention plan have been completed: 1) Disturbed soils at the identified site have been successfully stabilized, 2) Temporary erosion and sediment control measures have been removed, and/or 3) All storm water discharges associated with construction activity that are authorized by the above referenced Ohio EPA issued permit have otherwise been eliminated.

I understand that, by signing this GRC Pre-NOT Sign-off Form, I am no longer authorized to discharge storm water associated with construction activity at this site, and that discharging pollutants in storm water associated with construction activity to waters of the State is unlawful under the Ohio revised Code (ORC) 6111 where the discharge is no longer authorized by an Ohio EPA issued permit.

Completion of this form constitutes an understanding that the NASA Facilities Division Civil Systems Manager herby reassumes site responsibilities formally managed by the Facilities Division Project Manager and Prime Contractor.

Site Completion Signatures:

Facilities Division Project Manager Signature

Facilities Division Civil Systems Manager Signature

The completed form will be managed by the EEMO and filed with the specific project's records. Revised: 4/17/15

APPENDIX F.—EEMO MONTHLY CONSTRUCTION SITE INSPECTION FORM

NASA Glenn Research Center

Environmental - Storm Water Inspection Report

Project Name and Location:	
Project ID:	Contractor(s):
NASA Project and Construction Managers:	

NPDES Permit – Mandatory Items The following items, if checked, indicate the presence of a non-conformance that shall be corrected immediately upon notice. Corrective and Preventive Action Reporting may be warranted.	❑ If required, SWP3 was not onsite and available for review during the site inspection ❑ If required, contractor has inadequately maintained records of weekly and storm event inspections ❑ Insufficient and/or lack of sediment /erosion controls to prevent sediment loss from leaving project site ❑ Observance(s) of concrete washout and/or concrete slurry being allowed to enter storm inlet ❑ Observance(s) of direct purging of sediment and/or contaminated water to storm drainage structure ❑ Fuel tanks and drums of toxic materials are stored within 9 feet of a catch basin

Items marked below with an X are minor non-compliances with Ohio EPA NPDES Permit #3GQ0067*BG and applicable to the Ohio EPA Construction General Permit for the project. Corrective actions normally have a period of time to correct (i.e., 1 to 10 days based on severity)

1. Construction Entrances
- ❑ Construction entrances are not installed to minimize off-site tracking of sediment onto roadways
- ❑ Traffic leaving the site is dropping mud or leaving dirt trails
- ❑ Geotextile fabric is not placed under the stone driveway
- ❑ Roads are not swept immediately after sediment or mud has accumulated
- ❑ Gravel drive is not maintained and replaced when sediment laden
- ❑ Culvert pipe has not been installed to allow run-off to flow across the drive when the drive has been placed over a ditch

2. Storm Inlet Protection
- ❑ All inlets susceptible to sediment infiltration are not protected to prevent sediment from leaving site
- ❑ Accumulated sediment around the inlet has not been removed on a timely basis
- ❑ Water does not pond around the inlet when it rains
- ❑ Curb Inlet protection does not cover the entire grate and curb window
- ❑ Yard inlet protection does not encircle the entire grate
- ❑ Inlet protection is not properly entrenched or anchored so water does not pass under it
- ❑ Inlet protection fabric is not properly supported to prevent sagging

3. Non-Sediment Pollution Control and Truck Wash Out Area
- ❑ Waste and packaging are not disposed of in a dumpster
- ❑ Sediment is not being swept back to the site instead of the storm inlets
- ❑ Stockpiles of soil and gravel are not stored 3 meters from inlets
- ❑ Proper dewatering methods are not used at excavation sites
- ❑ Concrete washout area is not present or being properly maintained
- ❑ Washings are not contained on site within a bermed area until they harden and allowed to enter a ditch or storm inlet

4. Silt Fence Applications
- ❑ Silt fence is not installed with the holding posts on the downslope side
- ❑ Silt fence is knocked down
- ❑ Silt fence is not properly trenched at least 6" into the ground
- ❑ Silt fence trench is not backfilled to prevent runoff from undercutting the fence
- ❑ Fence is not pulled tight so it won't sag when water ponds behind it
- ❑ Ends of the silt fence are not brought upslope to prevent run-off from going around the ends
- ❑ Built-up sediment is not being removed when it has reached one-third the height of the fence
- ❑ The silt fence is not controlling an appropriate amount of area

5. Temporary Soil Stabilization
- ❑ All disturbed areas that will be dormant for 14 days or longer have not been seeded, mulched, or strawed
- ❑ Soil stockpiles that will be dormant for 14 days or longer have not been seeded, mulched, or covered with a tarp
- ❑ Stabilization has not been started within 7 days of the date the area became inactive
- ❑ For areas within 50 feet of a waterway, the stabilization was not started within 2 days of the date the area became inactive
- ❑ If using straw mulch, it has not been spread over the entire disturbed area in a consistent and even layer
- ❑ For slopes, straw is not properly secured with netting, or straw matting has not been used
- ❑ Bare spots, washouts, and/or areas of unhealthy growth are not being repaired or replaced

6. Permanent Soil Stabilization
- ❑ Proper soil preparation has not been completed prior to final seeding
- ❑ Final seeding and mulching has not been applied at the appropriate rate to achieve 70 % soil stabilization
- ❑ Bare spots, washouts, and/or areas of unhealthy growth are not being repaired or replaced
- ❑ When rainwater has been inadequate, the seeded areas have not been manually watered until vegetation is established

Remarks: (*Use reverse side for additional observances and follow-up information)*

Inspector Name and Title:	Date of Inspection	Time of Inspection

Updated 8/28/13

NASA Glenn Research Center

Environmental - Storm Water Inspection Report

Additional Remarks and Follow-up Information:

Observance(s)	Follow-Up Findings/Corrections

Updated 8/28/13